

Appl. No. 10/698,988
Amdt. Dated November 4, 2005

Attorney Docket No.: NSL-014
Reply to Office Action of August 8, 2005

COMPLETE LISTING OF ALL CLAIMS

Kindly amend claims 1 and 13 and add new claims 19-22 as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

- 1 1. (currently amended) A method for manufacturing photovoltaic devices, comprising the steps
2 of:
3 forming a layered photovoltaic device structure having a plurality of layers including a
4 bottom electrode layer, a top electrode layer, and one or more active layers between the top
5 and bottom electrode layers;
6 cutting through one or more of the layers of the layered structure to divide the layered
7 structure into one or more separate device sections, each section having a portion of the
8 active layer disposed between portions of the top and bottom electrode layers, wherein at
9 least one of the layers is an unpatterned layer at the time of cutting;
10 providing at least one form of protection that protects against undesired inter-layer
11 contact during cutting ~~prevents shorts which could arise from the cutting steps;~~
12 assembling two or more device sections into a module; and
13 electrically connecting the bottom electrode layer portion of one device section to the top
14 electrode layer portion of another device section.
- 1 2. (original) The method of claim 1 wherein cutting through one or more of the layers of the
2 layered structure includes cutting through a substrate layer of the layered structure
- 1 3. (original) The method of claim 1 wherein cutting through one or more of the layers of the
2 layered structure includes cutting through all of the layers of the layered structure.
- 1 4. (original) The method of claim 1 wherein all of the layers of the layered structure are
2 unpatterned layers at the time of cutting.
- 1 5. (original) The method of claim 1, further comprising protecting an edge of a device section
2 against undesired electrical contact between two or more of the bottom electrode, top
3 electrode and active layer portions.
- 1 6. (original) The method of claim 5 wherein protecting an edge of a device section includes the
2 step of, before cutting through one or more of the layers of the layered structure, placing

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3 short-proofing material between adjacent layers of the layered structure proximate a location
4 where the layered structure is to be cut.

1 7. (original) The method of claim 5, wherein protecting an edge of a device section includes the
2 step of passivating a side of the device section.

1 8. (original) The method of claim 7 wherein passivating a side of the device section includes the
2 step of oxidizing the side, exposing the side to passivating chemicals, or coating the side
3 with a passivating substance.

1 9. (original) The method of claim 1 wherein assembling two or more device sections into a
2 module includes the step of laminating the two or more device sections side-by-side between
3 layers of laminating material.

1 10. (original) The method of claim 1, further comprising the step of, before cutting through one
2 or more of the layers of the layered structure to divide the layered structure into one or more
3 device sections, patterning the top electrode layer and/or active layers to define the one or
4 more device module sections.

1 11. (original) The method of claim 10, further comprising protecting an edge of a device section
2 against undesired electrical contact between two or more of the bottom electrode, top
3 electrode and active layer portions of the one or more device module sections.

1 12. (original) The method of claim 11, wherein protecting an edge of a device section includes
2 the steps of:
3 after patterning the top electrode layer and/or active layers, disposing an insulating material
4 between the active layer portions of two or more adjacent device sections.

1 13. (currently amended) The method of claim [12] wherein forming a layered structure includes
2 covering the active layer and the insulating material with an unpatterned top electrode layer
3 before cutting the layered structure to divide the layered structure into one or more device
4 sections.

1 14. (original) The method of claim 12 wherein cutting the layered structure includes cutting the
2 layered structure at locations corresponding to the insulating material.

1 15. (original) The method of claim 1 wherein electrically connecting the bottom electrode layer
2 portion of one device section to the top electrode layer portion of another device section

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3 includes the steps of:

4 exposing a portion of an upper surface of the bottom electrode layer portion of a first device
5 section; and connecting an electrically conductive material between the top electrode layer
6 portion of a second device section and the exposed portion of the upper surface of the bottom
7 electrode layer.

1 16. (canceled)

1 17. (canceled)

1 18. (previously presented) The method of claim 1 wherein providing at least one form of
2 protection that prevents shorts which could arise from the cutting steps includes, before
3 cutting through the layered structure, placing strips of electrically insulating, short-proofing
4 material between the top electrode layer and the one or more active layers at the locations
5 where the layered structure is to be cut, whereby the strips of short-proofing material protect
6 against undesired contact as the layered structure is cut.

1 19. (new) A method for manufacturing photovoltaic devices, the method comprising:
2 forming a layered photovoltaic device structure having a plurality of layers including a
3 bottom electrode layer, a top electrode layer, and one or more active layers between the top
4 and bottom electrode layers;
5 cutting through one or more of the layers of the layered structure to divide the layered
6 structure into one or more separate device sections, each section having a portion of the
7 active layer disposed between portions of the top and bottom electrode layers, wherein at
8 least one of the layers is an unpatterned layer at the time of cutting;
9 providing at least one form of protection that prevents shorts which could arise from the
10 cutting steps;
11 assembling two or more device sections into a module; and
12 electrically connecting the bottom electrode layer portion of one device section to the top
13 electrode layer portion of another device section;
14 wherein providing at least one form of protection that prevents shorts which could arise from
15 the cutting steps includes, before cutting through the layered structure, placing strips of
16 electrically insulating, short-proofing material between the top electrode layer and the one or
17 more active layers at the locations where the layered structure is to be cut, whereby the strips
18 of short-proofing material protect against undesired contact as the layered structure is cut.

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- 1 20. (new) The method of claim 19 wherein cutting through one or more of the layers of the
2 layered structure includes cutting through a substrate layer of the layered structure
- 1 21. (new) The method of claim 19 wherein all of the layers of the layered structure are
2 unpatterned layers at the time of cutting.
- 1 22. (new) The method of claim 19, further comprising protecting an edge of a device section
2 against undesired electrical contact between two or more of the bottom electrode, top
3 electrode and active layer portions.